

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 3, 4, 6, 11, 18, 19 28-30, 41 and 45-55 are pending in the present application. Claims 1, 3, 4, 6, 11, 18, 19 28-30 and 41 are amended, Claims 2, 5, 7, 8, 12-16, 26, 27 and 42-44 are cancelled and Claims 45-55 are added by the present amendment. Claims 9, 10, 17, 20-25 and 31-40 are previously cancelled.

Claim amendments and new claims find support in the application as originally filed, for example, in the claims as originally filed and in Figs.18-30. In addition support can be found in the specification as originally filed. Thus, no new matter is added.

In the outstanding Office Action, Claim 1 was rejected under 35 U.S.C. §112, second paragraph, as indefinite; Claims 1, 3, 4, 11-13, 18, 19, 26 and 27 were rejected under 35 U.S.C. §103(a) as unpatentable over Raoux et al. (U.S. Pat. No. 7,004,107, herein “Raoux”) in view of Kubota et al. (JP 2000-286235, herein “Kubota”) and Hilliker (U.S. Pat. No. 6,631,693); Claims 6, 16 and 44 were rejected under 35 U.S.C. §103(a) as unpatentable over Raoux, Kubota, and Hilliker in further view of Collins et al. (U.S. Pat. No. 6,252,354, herein “Collins”); Claim 14 was rejected under 35 U.S.C. §103(a) as unpatentable over Raoux, Kubota, and Hilliker in further view of Shan et al. (U.S. Pat. Pub. No. 2001/0009139, herein “Shan”); Claim 15 was rejected under 35 U.S.C. §103(a) as unpatentable over Raoux, Kubota, and Hilliker in further view of Hendricks et al. (U.S. Pat. No. 4,340,461, herein “Hendricks”); Claims 28 and 29 were rejected under 35 U.S.C. §103(a) as unpatentable over Raoux, Kubota, and Hilliker in view of Sato et al. (U.S. Pat. No. 6,199,505, herein “Sato”); Claim 30 was rejected under 35 U.S.C. §103(a) as unpatentable over Raoux, Kubota, and Hilliker in view of Nakano et al. (U.S. Pat. No. 6,270,618, herein “Nakano”); and Claims 41-Hilliker in view of Nakano et al. (U.S. Pat. No. 6,270,618, herein “Nakano”); and Claims 41-

43 were rejected under 35 U.S.C. §103(a) as unpatentable over Raoux, Kubota, and Hilliker in view of Shannon et al. (U.S. Pat. Pub. No. 2003/0192475, herein “Shannon”).

With respect to the rejection of Claim 1 under 35 U.S.C. §112, second paragraph, Claim 1 has been amended to remove the reference to the “predetermined member.” Accordingly, Applicants respectfully request that the rejection of Claim 1 under §112, second paragraph be withdrawn.

Before turning to the cited references, a brief overview of the claimed invention may be helpful. As amended, the claimed invention recites that impedance setting section is configured to adjust a resonance state thereof relative to a higher harmonic of a fundamental frequency of the RF power, which is input from the plasma into the corresponding interconnection and thereby set an impedance (one kind of the backward-direction impedance) against the higher harmonic. With the arrangement recited in the claims, it is possible to select a certain higher harmonic as a resonance target and set an impedance against the selected higher harmonic, so as to reliably control a characteristic of a plasma process.

Addressing now the rejection of Claims 1, 3, 4, 11-13, 18, 19, 26 and 27 under 35 U.S.C. § 103(a) as unpatentable over Raoux, Kubota, and Hilliker, that rejection is respectfully traversed.

Kubota describes an impedance adjusting mechanism 30 disposed on a line connected to ground through a chamber wall portion. Specifically, in the mechanism 30, the capacitance between the bottom wall 1c of the chamber 1 and the bellows 6 is adjusted to split an electric current flowing thought the bottom wall 1c into electric currents flowing through the bellows and the slide contact. This structure is intended to prevent abnormal electric discharge from occurring around the pedestal 4 for a susceptor. However, the structure of the impedance adjusting mechanism 30 described in Kubota is unable to adjust a resonance state thereof

relative to a higher harmonic of a fundamental frequency of the RF power, as is recited in amended Claim 1 and added Claim 45. Further, the impedance adjusting mechanism 30 of Kubota is not arranged ***between said one of the first and second electrodes and the matching circuit on the first interconnection*** as is the an impedance setting section recited in amended Claim 1 and similarly in Claim 45.

Raoux describes an impedance tuner 108 that is used for the impedance of reactor 30. In this respect, Raoux states in col. 18, line 56-61 that “[t]he actions taken to adjust for such an impedance drift may include, but are not limited to, adjusting pressure within the reactor chamber, increasing or decreasing high frequency or low frequency RF power and , as described above, adjusting the setting of impedance tuner 108.” Clearly, the impedance tuner 108 described in Raoux is conceived to compensate for drift of the impedance of the reactor 30. Nowhere does Raoux describe adjusting a resonance state thereof relative to a higher harmonic of a fundamental frequency of the RF power, ***which is input into an interconnection from plasma***, as is recited in amended Claim 1 and added Claim 45. Further, it should be noted that Raoux refers to “harmonics” in relation to harmonics in a plasma sheath.

Hilliker describes an absorptive filter network 102 disposed between the RF generator 101 and the matching network 103. The location of the absorptive filter network 102 is different from the filter recited in amended Claim 1 and new Claim 45. Particularly, the matching network 103 of Hilliker is interposed between the absorptive filter network 102 and the reactor 103. Thus, the absorptive filter network 102 of Hilliker cannot be utilized for adjusting the resonance state relative to a higher harmonic input from the reactor 104 of Hilliker to control a characteristic of the plasma process, as is described in amended Claim 1 and added Claim 45.

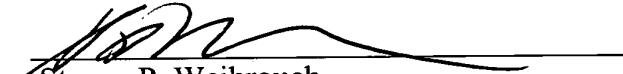
Accordingly, Applicants respectfully submit that Claim 1 and similarly Claim 45 and claims depending therefrom patentably distinguish over Raoux, Kubota, and Hilliker considered individually or in any proper combination.

In addition, the further cited Collins, Shan, Hendricks, Sato, Nakano and Shannon references do not cure the above noted deficiencies of Raoux, Kubota, and Hilliker.

Consequently, in light of the above discussion and in view of the present amendment the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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